

SEQUENCE LISTING

<110> Fronticelli, Clara

<120> POLYMERIC HEMOGLOBIN MUTANTS

<130> 6056-279 PC

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<150> 60/102,640

<151> 1998-10-01

<160> 12

<170> PatentIn Ver. 2.0

<210> 1

<211> 438

<212> DNA

<213> Human

<400> 1

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<210> 2

<211> 438

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Mutant of
human beta-globin

<400> 2

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aaggctcatg gcaagaaagt gctcggtgcc tttagtgatg gcctggctca cctggacaac 240
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 ctggcccaca agtatcac 438

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 <212> PRT
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<400> 3
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 Lys Val Asn Val Asp Glu Val Gly Gly Glu Ala Leu Gly Arg Leu Leu
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 Val Val Tyr Pro Trp Thr Gln Arg Phe Phe Glu Ser Phe Gly Asp Leu
 35 40 45
 Ser Thr Pro Asp Ala Val Met Gly Asn Pro Lys Val Lys Ala His Gly
 50 55 60
 Lys Lys Val Leu Gly Ala Phe Ser Asp Gly Leu Ala His Leu Asp Asn
 65 70 75 80
 Leu Lys Gly Thr Phe Ala Thr Leu Ser Glu Leu His Cys Asp Lys Leu
 85 90 95
 His Val Asp Pro Glu Asn Phe Arg Leu Leu Gly Asn Val Leu Val Cys
 100 105 110
 Val Leu Ala His His Phe Gly Lys Glu Phe Thr Pro Pro Val Gln Ala
 115 120 125
 Ala Tyr Gln Lys Val Val Ala Gly Val Ala Asn Ala Leu Ala His Lys
 130 135 140
 Tyr His
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<210> 4
 <211> 146
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Mutant of

human beta-globin

<400> 4

Val His Leu Thr Pro Glu Glu Lys Cys Ala Val Thr Ala Leu Trp Gly
 1 5 10 15

Lys Val Asn Val Asp Glu Val Gly Gly Glu Ala Leu Gly Arg Leu Leu
 20 25 30

Val Val Tyr Pro Trp Thr Gln Arg Phe Phe Glu Ser Phe Gly Asp Leu
 35 40 45

Ser Thr Pro Asp Ala Val Met Gly Asn Pro Lys Val Lys Ala His Gly
 50 55 60

Lys Lys Val Leu Gly Ala Phe Ser Asp Gly Leu Ala His Leu Asp Asn
 65 70 75 80

Leu Lys Gly Thr Phe Ala Thr Leu Ser Glu Leu His Ala Asp Lys Leu
 85 90 95

His Val Asp Pro Glu Asn Phe Arg Leu Leu Gly Asn Val Leu Val Gly
 100 105 110

Val Leu Ala His His Phe Gly Lys Glu Phe Thr Pro Pro Val Gln Ala
 115 120 125

Ala Tyr Gln Lys Val Val Ala Gly Val Ala Asn Ala Leu Ala His Lys
 130 135 140

Tyr His
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<210> 5

<211> 141

<212> PRT

<213> Human

<400> 5

Val Leu Ser Pro Ala Asp Lys Thr Asn Val Lys Ala Ala Trp Gly Lys
 1 5 10 15

Val Gly Ala His Ala Gly Glu Tyr Gly Ala Glu Ala Leu Glu Arg Met
 20 25 30

Phe Leu Ser Phe Pro Thr Thr Lys Thr Tyr Phe Pro His Phe Asp Leu
 35 40 45

Ser His Gly Ser Ala Gln Val Lys Gly His Gly Lys Lys Val Ala Asp
 50 55 60

Ala Leu Thr Asn Ala Val Ala His Val Asp Asp Met Pro Asn Ala Leu
 65 70 75 80

Ser Ala Leu Ser Asp Leu His Ala His Lys Leu Arg Val Asp Pro Val
 85 90 95

Asn Phe Lys Leu Leu Ser His Cys Leu Leu Val Thr Leu Ala Ala His
 100 105 110

Leu Pro Ala Glu Phe Thr Pro Ala Val His Ala Ser Leu Asp Lys Phe
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Leu Ala Ser Val Ser Thr Val Leu Thr Ser Lys Tyr Arg
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<210> 6

<211> 141

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Mutant of
 human alpha-globin

<400> 6

Val Leu Ser Pro Ala Asp Lys Thr Asn Val Lys Ala Ala Trp Gly Lys
 1 5 10 15

Val Gly Ala His Ala Gly Glu Tyr Gly Ala Glu Ala Leu Glu Arg Met
 20 25 30

Phe Leu Ser Phe Pro Thr Thr Lys Thr Tyr Phe Pro His Phe Asp Leu
 35 40 45

Ser His Gly Ser Ala Gln Val Lys Gly His Gly Lys Lys Val Ala Asp
 50 55 60

Ala Leu Thr Asn Ala Val Ala His Val Asp Asp Met Pro Asn Ala Leu
 65 70 75 80

Ser Ala Leu Ser Asp Leu His Ala His Lys Leu Arg Val Asp Pro Val
 85 90 95

Asn Phe Lys Leu Leu Ser His Ser Leu Leu Val Thr Leu Ala Ala His
 100 105 110

Leu Pro Ala Glu Phe Thr Pro Ala Val His Ala Ser Leu Asp Lys Phe
 115 120 125

Leu Ala Ser Val Ser Thr Val Leu Thr Ser Lys Tyr Arg
 130 135 140

<210> 7

<211> 423

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Mutant of
 human alpha-globin

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 aaggtggccg acgcgctgac caacgccgtg gcgcacgtgg acgacatgcc caacgcgctg 240
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 ctaagccact ccctgctggt gaccctggcc gccacctcc ccgccgagtt caccctgctg 360
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<210> 8

<211> 4

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Factor Xa
 recognition sequence

<400> 8

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<210> 9

<211> 27

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Mutagenizing
oligonucleotide for human beta-globin Ser9- Cys
mutation

<400> 9

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<210> 10

<211> 27

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Mutagenizing
oligonucleotide for human beta-globin Cys93-Ala
mutation

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<210> 11

<211> 18

<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence: Mutagenizing
oligonucleotide for human beta-globin Cys112-Gly
mutation

<400> 11

cagcacaccg accagcac

18

<210> 12

<211> 423

<212> DNA

<213> Human

<400> 12

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acctacttcc cgcacttcca cctgagccac ggctctgccc aggttaaggg ccacggcaag 180
aaggtggccg acgcgctgac caacgccgtg gcgcacgtgg acgacatgcc caacgcgctg 240
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cgt 423